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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,459	06/07/2001	Travis A. Lemke	54197-237098	9195

25764 7590 05/20/2003

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EXAMINER

SOOHOO, TONY GLEN

ART UNIT PAPER NUMBER

1723

DATE MAILED: 05/20/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/876,459

Applicant(s)

LEMKE, TRAVIS A.

Examiner

Tony G Soohoo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Newly submitted claims 14-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Original claims 1-13 (Group I) are directed to an apparatus for chemical mixing.

New claims 14-21 (Group II) are directed to a method of making a slurry having a desired solids content.

2. Inventions Group II and Group I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process can be practiced by a materially different apparatus such as a device without a 1<sup>st</sup> valve and 2<sup>nd</sup> valve as required by the process and the apparatus may practice another materially different process such as mixing electrolytic fluids together, or practice a method without recirculation of material (see claim 1), or practice a process of mixing with the use of only one valve (as evidenced by claim 1, "at least one valve").

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

3. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for

prosecution on the merits. **Accordingly, claims 14-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.**

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 11 (dependent from claim 2) recites the limitation "the circulation loop" in claim 11. There is insufficient antecedent basis for this limitation in the claim and parent claim 2.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, and 8, 10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al 5647391 in view of Lascombes 5318750.

Note: With regards to the function of the use of solid particles as one mix component, has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

Chan et al (Chan) teaches a mix volume vessel 10, 14 which is connected to source components 22, 26; a control system 28, a first sensor 36 and sensor signal for each source whereby probe is a conductivity sensor meter 36 for measuring the amount of component(s) in the mixed volume of liquid of the mix vessel (claim 10); and respective peristaltic vacuum pump valves 30, 32 (claim 12) to regulate the chemical components via control 300 and control signal.

Chan et al discloses all of the recited subject matter as defined within the scope of the claims with the exception of "varying the rate of addition of the at least one chemical component". Chan teaches the control of a peristaltic pump in response to the measured conductivity, see especially, claims 14-15 of Chan et al. Although initiation of the pump is clearly described, however it is unclear a flow rate of addition is varied. It is noted that a peristaltic pump is an operative volume type pump.

Lascombes teaches a mix volume conduit between 210, 220, 230, 240, 250 and 31 which is connected to source components 1,2,3,4,5 having solid particulate salt; a control system 300, first sensors conductivity (pH) cells 210, 220, 230, 240, 250 for each source and including a pH conductivity sensor meter 200, 201 for measuring the amount of solid component dissolved in the mixed volume of liquid; and respective *variable-flow rate pumps* 110, 120, 130, 140, 150 to regulate the flow rate of chemical components via control 300; and a pump 31 urge the fluid into motion, see column 3, lines 23-30, and 46-52; and column 4, lines 33-37.

Whereby Lascombes teaches that one may use a controller to control a variable flow rate pumps to control and regulate the flow rate of chemical component additive

(i.e. vary the addition caused by the variable flow rate pump). It is noted that a variable flow pump may operate and function as a structural equivalent to that of a valve whereby the flow may be shut off when the pump is not functioning and the flow valve may be open when the pump is operating. In light of the teaching that a variable flow pump may be used to control the flow rate addition of material into a mixture tank, it is deemed that it would have been obvious to one of ordinary skill in the art to substitute for the peristaltic pump 30, 32 of Chan et al with a variable flow rate pump such as the type of taught by Lascombes such that one may continuously adjust and vary the flow rate of chemical component addition to the mixing tank so that a more precise regulation of the additive is achieved. (claims 1-2, 8, 10, 12).

With regards to claims 4-5, the Chan reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of the tank 14 being made of a particular material being of the group of claims 4 and 5.

It is noted that the materials of UHMW polyethylene, fluorinated polymer such as PTFE, or polypropylene, is commonly known in the art for the property of the resistance to corrosion and stains, and the ease of cleaning.

Since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, In re Leshin, 125 USPQ 416, It is deemed that it would have been obvious to one of ordinary skill in the art to make the mix vessel 14 out of UHMW polyethylene, fluorinated polymer such as PTFE, or polypropylene, such that one may

provide resistance to corrosion and stains, and the ease of cleaning of the inside of the tank that may occur due to the mixed fluid.

With regards to claims 3, and 13, the Chan reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of a 1<sup>st</sup> sensor for detecting the amount of chemical added to the mix volume vessel 14 (claim 3), and with the exception of the tank 14 having an outlet to remove the mixture vessel 14 to a point of use (claim 13).

The Lascombes reference as pointed out above, teaches the use of both a 1<sup>st</sup> sensor to measure the amount of source material added to the mixture and a 2<sup>nd</sup> pH conductivity mixture to measure the final mixture. Also Lascombes teaches the use of an outlet 30 to send the mixture to a final point of use 100.

In view of the teaching of Lascombes that a more accurate control of the mixture may be performed with the use of both a 1<sup>st</sup> sensor to measure the source and a 2<sup>nd</sup> sensor to measure the mixture, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the device of Chan, with a 1<sup>st</sup> sensor at each of the sources 22, 26 in connection with the control 28 as shown by Lascombes such that one may better control the additive amount of the source components in addition to monitor the final mixed product in the mix vessel 14.

Also, in view of the teaching of teaching that one may provide an outlet to a volume whereby a mixture is made such that it may be dispensed to a final use point, it is deemed that it would have been obvious to one of ordinary skill in the art to provide

with Chan et al with an outlet so that one may easily use and dispense the mixture 12 which was made in the tank 14 for final use.

8. Claims 7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al 5647391 in view of Lascombes 5318750 as applied to respective claim 1 or 2 above, and further in view of Leverenz et al 3710811.

The Chan et al reference as modified by the Lascombes reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of a recirculation loop; whereby the conductivity probe is in the recirculation loop (claim 11/2).

The Leverenz et al reference teaches that a mix volume tank 14 or 12, may be provided with a recirculation loop 38, 16, 38 to that it may proper mixture while also providing a means to add additional source material via tank 20 in response to the concentration sensor 18. In view of teaching of Leverenz et al that one may provide a recirculation loop in the mix volume vessel for a better manner to maintain the desired concentration of material mixture in a mix vessel, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the mix vessel tank 14 of Chan et al with a recirculation line connected back to the tank such that the concentration maintained by the tank 14 is better maintained. With regards to claims 9 and 11, it is noted that the mix vessel is part of a recirculation loop, and since a recirculation of material as modified by the teaching by Loverenz et al causes fluid to pass though the loop including the mixing tank, the probe may be deemed as being in the recirculation loop.



Nonetheless, the placement of a sensor probe in a recirculation return branch of a recirculation mixer is deemed to be obvious to one of ordinary skill in the art to move the probe along anywhere along the recirculation loop, since it has been held that rearranging parts of an invention involves only routine skill in the art. (In re Japikse, 86 USPQ 70.). Whereby a person having ordinary skill in the art would have to merely change the position of an element without destroying the function of the probe for conductivity measurement, such motivation for the change in position may be for reasons of ease, and convenience of manufacture of the device, or a more desirable measurement of the conductivity at a more advantageous position in the recirculation loop.

#### ***Response to Arguments***

9. Applicant's arguments filed 3/26/2003 have been fully considered but they are not persuasive. Applicant argues that the prior art does not show "at least one control valve that is operative to vary the rate of addition of the at least one chemical component in response to the measured conductivity value of the slurry". In response it is noted that Lascombe reference shows such a feature, and that the Chan reference as modified by the Lascombe reference as discussed above, discloses all of the recited limitations of the claims, including a mixing vessel, a pH sensor for conductivity measurements which a controller processes the signals from the conductivity sensor to provide an output signal to control a valve pump for operation to control at least the initiation of chemical additive flow into the mixture, as shown by the Chan reference, or

even of that the signal controlling the varying the flow rate of the additive by variable flow rate pumps, as shown by the Lascombe reference.

Thus the claims are deemed not allowable over the art of record for reasons outlined above in the rejection of the claims above.

### **Conclusion**

10. Applicant has amended independent claim 1 with the direct subject matter of a mixing vessel of claim 6 without the inclusion of subject matter of claim 3, (claim 6 had previously also included limitations of claims 3 and 1). Applicant has also amended a new limitation that the valve control signal from the control system is *operative to vary the rate of addition* of the at least one chemical component in response of the measured conductivity value of the slurry, which was not previously presented in any claims. The combination of partial subject matter of previous claim 6 with that of claim 1 has presented a new scope of limitations with regards to claims 2, 4-5, 10-13 which was not previously presented and examined upon its merits in the last office action, paper no 8.

11. Applicant has also resolved dependencies of claims 10-11 which had previously been dependent upon a non-existent claim 29.

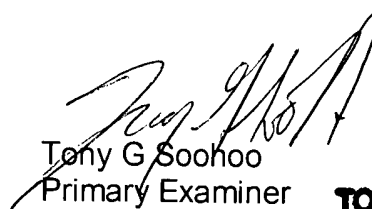
12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G Soohoo whose telephone number is (703) 308-2882. The examiner can normally be reached on 7:00 AM - 5:00 PM, Tues. - Fri.. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tony G Soohoo  
Primary Examiner  
Art Unit 1723

**TONY G. SOOHOO**  
**PRIMARY EXAMINER**

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